

ABSTRACT OF THE DISCLOSURE

A compound of the general formula: $R^1R^2R^4MR^5$, wherein R^1 , R^2 and R^4 are independently an aryl, alkyl, alkenyl or alkynyl group, wherein at least one of R^1 , R^2 and R^4 is fully or partially fluorinated, wherein M is selected from group 14 of the periodic table, and wherein R^5 is either an alkoxy group, OR^3 , or a halogen group, X. This compound formed can be further reacted to attach an additional organic R group, and/or hydrolyzed with one or more similar compounds (preferably having one or two R groups bound to M), to form a material having a molecular weight of from 500 to 10,000, which material can be deposited on various substrates as a coating or deposited and patterned for a waveguide or other optical device components. Methods for making and using compounds of the general formula $R^1R^2R^4MR^5$ are also disclosed.

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